

POST CRUISE REPORT

1. Ship Name - R/V Asterias/ Woods Hole Oceanographic Institution. (WHOI)
2. Cruise Leg - ASTR 94-3
3. Project Number and Name: #9470-27544/Massachusetts Bay
4. Funding Agency - U.S. Geological Survey (USGS)
5. Contract - N/A
6. Area of Operations - Cape Cod Bay and Southern Stellwagen Basin
7. Dates and Ports of Call - 6/20/94 - 6/30/94:
6/20 - 6/25/94 - Sandwich, Mass.
6/25 - 6/30/94 - Plymouth, Mass.
8. Chief Scientist: Rick Rendigs. (USGS)
Branch Principal: (Data Analysis/Project Chief): Harley Knebel
9. Scientific Party: Ken Parolski - USGS - Seismic Specialist
Rick Rendigs - USGS - Marine Geologist
10. Ship's Captain - Dave Olmstead - (WHOI)
11. Purpose of Cruise - Collection of Side Scan Sonar (non-Bob) and Shallow Subbottom Seismic Reflection Data.
12. Navigation Techniques - Differential GPS
13. Scientific Equipment: Klein 100 KHZ Sidescan Sonar System
Q-Mips Data Acquisition System
EPC Recorder (3 active channels)
Computers for navigation display
3.5 KHZ echosounder
Echotrac Digital Fathometer
14. Tabulated Information:
Days At Sea - 9 (day trips)
Continuous Data - Approximately 445km. of side scan and 3.5KHZ data
Transect Lines - 26

Transect line Information:

<u>Line #</u>	<u>Date</u>	<u>Lat/Long</u>	<u>Average Water Depth (m)</u>
1	6/20/94	41°47.10'/70°27.00' 41°47.10'/70°08.00'	14.0
2	6/21/94	41°46.00'/70°27.00' 41°46.00'/70°11.50'	14.0
3	6/23/94	41°48.50'/70°31.00' 41°48.50'/70°08.40'	15.5
4	6/24/94	41°51.00'/70°30.50' 41°51.00'/70°09.80'	17.0
5	6/24/94	41°54.00'/70°31.50' 41°54.00'/70°07.50'	18.5
6	6/29/94	41°57.00'/70°34.00' 41°57.00'/70°15.00'	25.00
7	6/26/94	41°59.00'/70°35.50' 41°59.00'/70°06.20'	26.5
8	6/26/94	42°02.50'/70°36.60' 42°02.50'/70°13.90'	34.0
10	6/29/94	42°05.00'/70°30.00' 42°05.00'/70°20.00'	51.0
11	6/27/94	42°05.40'/70°27.00' 42°13.80'/70°31.30'	53.0
12	6/27/94	42°13.80'/70°31.30' 42°19.30'/70°28.30'	65.0
13	6/27/94	42°19.30'/70°28.30' 42°21.10'/70°29.50'	81.0
14	6/27/94	42°21.10'/70°29.50' 42°22.70'/70°25.70'	76.0
15	6/27/94	42°22.70'/70°25.70' 42°18.70'/70°26.60'	85.0
16	6/27/94	42°18.70'/70°26.60' 42°12.90'/70°25.00'	79.0
17	6/27/94	42°12.90'/70°25.00' 42°05.60'/70°25.00'	64.0

18	6/27/94	42°03.50'/70°35.00' 41°58.10'/70°31.20'	19.0
20	6/22/94	41°55.30'/70°30.00' 41°50.80'/70°30.00'	20.0
21	6/21/94	41°50.80'/70°30.00' 41°45.00'/70°23.80'	12.0
22	6/23/94	41°54.00'/70°08.60' 41°45.70'/70°12.80'	12.0
23	6/23/94	42°00.00'/70°06.50' 41°54.00'/70°08.60'	17.0
24	6/20/94	41°50.00'/70°11.50' 41°47.10'/70°08.00'	9.0
25	6/22/94	41°52.20'/70°18.50' 41°47.90'/70°27.10'	24.0
26	6/29/94	42°00.02'/70°18.40' 41°52.20'/70°18.50'	36.0
27	6/29/94	42°00.02'/70°18.40' 42°06.00'/70°22.00'	60.0
28	6/29/94	42°06.00'/70°22.00' 42°05.00'/70°20.00'	60.0

(16) Submitted by - Rick Rendigs

(17) COMMENTS:

The cruise was very successful in accomplishing about 95 percent of the original "landside" expectations for total track line coverage. Data quality was excellent and the records clearly displayed areas of high and low backscatter which will be useful for extending a sedimentary environments map southward from it's present extent in Massachusetts Bay. The 3.5khz Echosounder was an excellent companion piece of equipment for detailing the shallow subbottom stratigraphy as the reflectors position relative to the surface of the seafloor is a useful adjunct for interpreting side scan sonar records.

There was no downtime due to poor weather conditions although about one-half a day was lost due to a bad termination on the side scan winch. The winch had to be removed from the R/V Asterias and trucked to New Hampshire for repair. In it's absence, science marched on with the use of a hand deployed side scan cable. Fortunately, the winch was returned within 36 hours and the callused hands and aching muscles of the human winches were abated with some post cruise libations.

Additional downtime of about one-half day was due to the side scan fish, apparently showing it's age of almost 15 years, producing erroneous signals. Fortunately, Ken Parolski was able to fix the problem which enabled the side scan fish to limp through another field season. As this type of work - the generalized picture of the seafloor bottom - appears to be a consistent component of many AMG and outside funded projects, I would like to recommend serious consideration for upgrading the side scan fish and or associated data acquisition systems with more modern equipment. I don't think we need one pixel resolution of the seafloor bottom with experimental systems, but I do feel we need basic, standard, modern equipment which can withstand the rigors of consecutive jobs during the field season and will ensure consistently high data quality and resolution for AMG and outside funded projects. If management is serious in expanding interagency projects and acquiring outside funding, let the technical people who work in the field and process the data have significant input for any future upgrades of this type of marine seismic equipment.

I would like to thank the captain of the R/V Asterias, Dave Olmstead, for his capable handling of the vessel and his professionalism during this project and allowing me to trash the galley during mealtime. I would also like to acknowledge the efforts of Ken Parolski in the overall operation of data acquisition and systems integration during the cruise and Tom O'Brien, Joe Newell, and Bob Barton for their assistance in dealing with the logistics of the repair of the side scan winch.

CAPE COD BAY

ASTR94-3

